

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A multichannel wavelength-division multiplex fiber optic transmission system, comprising:

an optical transmitter,

an optical receiver connected to the optical transmitter by an optical line, the line comprising:

at least one optical fiber, and

at least one set of channel regenerators,

wherein each one of the set of channel regenerators regenerates only a predetermined respective group of channels, each respective group forming only a non-overlapping subset of a set of channels to be regenerated, and each channel of the groups is predetermined based on channel wavelength.

2. (previously presented): The system claimed in claim 1, wherein the number of channel regenerators is a submultiple of the number of channels.

3. (original) The system claimed in claim 1 wherein each group includes only one channel.

4. (original) The system claimed in claim 3 wherein each regenerator is an optical regenerator.

5. (previously presented): The system claimed in claim 1 wherein at least one group includes a plurality of the channels.

6. (previously presented): The system claimed in claim 5, wherein the regenerator for the group having the plurality of channels comprises:

means for synchronizing the plurality of channels, and

an optical regenerator unit performing the regenerating of the plurality of channels.

7. (previously presented): The system claimed in claim 4, wherein each channel regenerator comprises a synchronous modulator.

8. (previously presented): The system claimed in claim 1, wherein each channel regenerator comprises a demultiplexer and a multiplexer so as independently to process channels which are to be regenerated and channels which are not to be regenerated.

9. (previously presented): The system claimed in claim 1, wherein each channel regenerator comprises an inserter/extractor system for isolating channels to be regenerated.

10. (currently amended): The system claimed in claim 1, wherein each channel regenerator comprises a regeneration unit and a compensator amplifier compensating intensity differences between regenerated and non-regenerated channels.

11. (previously presented): The system as claimed in claim 1 further comprising supervisory means using a dedicated channel.

12. (previously presented): The system claimed in claim 11, wherein each channel regenerator comprises:

means for separating said dedicated channel from the other channels,
a supervisory unit for transmitting information relating to the status of said regenerator on
said dedicated channel, and

means for remultiplexing said dedicated channel with the other channels.

13. (previously presented): The system claimed in claim 12, wherein:

each channel regenerator includes a regenerator unit for regenerating the channels of a group of channels, and

the supervisory unit receives information from said regenerator unit and a portion of the regenerated signal delivered by said regenerator unit.

14. (previously presented): The system as claimed in claim 1 further comprising:

a plurality of spaced optical amplifiers, and

a plurality of spaced optical regenerators,

wherein the spacing of said optical regenerators is a multiple of the spacing of said optical amplifiers.

15. (new): The system as claimed in claim 3, wherein said each group includes only one channel regardless of a number of channels in the transmission system.

16. (new): The system as claimed in claim 15, wherein a number of regenerators in a set of regenerators of said at least one set of channel regenerators depends at least partially on the number of channels in said transmission system.

17. (new): The system as claimed in claim 16, wherein the set of channel regenerators successively regenerates the set of channels by having each one of the set of channel regenerators regenerate only the predetermined, respective group of channels, and wherein the set of channels to be regenerated is a plurality of channels regenerated by the set of channel regenerators.

18. (new): The system as claimed in claim 17, wherein channels that are not regenerated in a regenerator of the set of channel regenerators, are amplified to compensate intensity difference between the channels not regenerated and the regenerated channels.

19. (new): The system as claimed in claim 1, wherein the set of channel regenerators comprises a first channel regenerator and a plurality of other channel regenerators, and wherein each channel from the predetermined group of channels regenerated by the first channel regenerator is not regenerated by said plurality of other channel regenerators.

20. (new): The system as claimed in claim 1, wherein each channels of said set of channel is regenerated by only one channel regenerator from a set of channel regenerators of said at least one set of channel regenerators.